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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/579,671	CAR, CHRISTIAN	
	Examiner	Art Unit	
	ZEWDU BEYEN	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 18 May 2006.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-23 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-23 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 18 May 2006 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>05/18/2006</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

1. claims 1-23, have been examined and are pending.

Information Disclosure Statement

2. An initialed and dated copy of applicant's IDS form 1449 submitted 05/18/2006, is attached to the instant office action.

Drawings

Figs. 1-15, 17, 25, 26 and 27 are objected. The figures lack descriptive legends. Correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7, 19, 22 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 7 and 19, the meaning of the phrase "non-wireless infrastructure network like the Internet" is not clear.

In claim 22, the meaning of the phrase "substantially less than the range of the transmitting/receiving units" is not clear.

In claim 23, the meaning of the phrase "inter-related data" is not clear.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3, 10, 12-13, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billhartz to (**US6894985**), in view of Hasty to (**US7200149**) .

Regarding claim 1, Billhartz teaches a network element for setting up wireless networks for wireless data exchange between network elements and/or network users; the network element has a transmitting/receiving unit for wirelessly transmitting and receiving data, a control unit for controlling the processing of data and a data memory **(see fig.1,fig.3,fig.4 and abstract)**

the control unit**(see fig.3 and fig.4)** is adapted to evaluate connection state information (“which specifies the state of the connection between network elements and/or network users”) for data exchange between network elements and/or network users in order to determine partial sections of data transmission routes and/or complete data

transmission routes for transmitting or forwarding data (**abstract discloses monitoring link quality includes, at each node, recording transmission information for transmissions on links to neighboring nodes, calculating a packet error rate for each of the links to the neighboring nodes based upon the recorded transmission information, and determining link quality for each of the links**)

Billhartz does not teach evaluating connection path information

However, Hasty teaches evaluating connection path information (“which specifies the number of the network elements and the neighborhood relationships of the network elements of the network”) for data exchange between network elements and/or network users in order to determine partial sections of data transmission routes and/or complete data transmission routes for transmitting or forwarding data (**abstract discloses evaluating the relationship between the neighbors of each respective node to identify nodes of a wireless ad-hoc communication network whose capabilities of receiving data packets can be adversely affected by hidden node problems in order to avoid selecting paths containing those potentially problem nodes for routing data packets**)

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to enable the system of Billhartz to evaluate connection path information in order to determine data transmission routes, as suggested by Hasty. This modification would benefit the system of Billhartz to select reliable routes for transmitting data.

Regarding claim 2, Billhartz teaches the control unit is adapted to evaluate connection state information and connection path information stored in the data memory and/or connection state information and connection path information contained in the data intended for the data exchange (**col.3 lines 36-44 discloses the controller includes a transmission information recorder to record transmission information for transmissions on links to neighboring nodes, a packet error rate calculator to calculate a packet error rate for each of the links to the neighboring nodes based upon the recorded transmission information, and a link quality determining unit to determine link quality for each of the links to the neighboring nodes based upon the calculated packet error rate**)

Regarding claim 3, Billhartz teaches the connection path information stored in the data memory specifies the number of the network elements and the neighborhood relationships of the network elements of the entire network and the connection state information specifies the state of the connection between network elements and/or network users of the entire network (**col.3 lines 36-44 discloses the controller includes a transmission information recorder to record transmission information for transmissions on links to neighboring nodes, a packet error rate calculator to calculate a packet error rate for each of the links to the neighboring nodes based upon the recorded transmission information, and a link quality determining unit to determine link quality for each of the links to the neighboring nodes based**

upon the calculated packet error rate. Thus, the link quality information stored represents the entire network)

Regarding claim 10, Billhartz teaches a transmitting/receiving unit in accordance IEEE 802.1 la (**col.8 lines 4-8 discloses transmitting according to IEEE 802.1 la**)

Regarding claim 12, Billhartz teaches exchanging and storing connection path information and connection state information of the network elements relative to each other and of the network users relative to the network elements(**col.3 lines 36-44 discloses a transmission information recorder to record transmission information for transmissions on links to neighboring nodes, a packet error rate calculator to calculate a packet error rate for each of the links to the neighboring nodes based upon the recorded transmission information, and a link quality determining unit to determine link quality for each of the links to the neighboring nodes based upon the calculated packet error rate**)

evaluating connection state information exchanging data between network elements and/or network users based on the items of connection path information and items of connection state information by dispatching data through a first network user to a network element arranged in the proximity, and receiving the data through the network element and further dispatching the data in relation to an adjacent network element in a direction towards the addressed second network user or the addressed network user itself by way of a data transmission route ascertained from the connection state or a partial section of a data transmission route(**abstract discloses monitoring link quality includes, at each node, recording transmission information for transmissions on**

links to neighboring nodes, calculating a packet error rate for each of the links to the neighboring nodes based upon the recorded transmission information, and determining link quality for each of the links)

Billhartz does not teach evaluating connection path information

However, Hasty teaches evaluating connection path information for data exchange between network elements and/or network users in order to determine data transmission routes for transmitting data **(abstract discloses evaluating the relationship between the neighbors of each respective node to identify nodes of a wireless ad-hoc communication network whose capabilities of receiving data packets can be adversely affected by hidden node problems in order to avoid selecting paths containing those potentially problem nodes for routing data packets)**

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to enable the system of Billhartz to evaluate connection path information in order to determine data transmission routes, as suggested by Hasty. This modification would benefit the system of Billhartz to select reliable routes for transmitting data.

Regarding claim 13, Billhartz teaches finding network elements and network users by wirelessly receiving and emitting connection enquiries **(col.5 lines 10-15 discloses a wireless communication between plurality nodes)**

Regarding claim 21, Billhartz teaches the data exchange between two or more network users is always effected at least by means of a network element and on the basis of the connection state and the connection path information(**col.7 lines 56-64 discloses determining links quality to select a new route for exchanging data. Thus, to reliably deliver the data to its destination; the selected route must meet a certain quality, so evaluating a link quality to select a route has directly or indirectly play a major role on the exchange of data between nodes**)

Regarding claim 23, Billhartz teaches inter-related data can be stored distributedly in the data memories of a plurality of network elements (**col.7 lines 24-25 discloses storing packet size transmitted data, packet size received data, collision data and/or retry data**)

Claims 5,14-15,17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billhartz and Hasty as applied to claims 1 and 12 above, and further in view of Chen to (**US-PGPUB-2003/0007461**).

Regarding claim 5, Billhartz and Hasty do not teach data memory that is adapted for the storage of an item of authorization information which is unique in the network, in particular an item of address information, which is characterizing in respect of each network user and each network element in the network, and the control unit is adapted to transmit the authorization information by means of the transmitting/receiving units to other network elements and to evaluate the authorization information received from

other network elements to determine at least partial sections of data transmission routes in the network

However, Chen teaches a data memory that is adapted for the storage of an item of authorization information(i.e. **logical ID**) which is unique in the network, in particular an item of address information, which is characterizing in respect of each network user and each network element in the network, and the control unit is adapted to transmit the authorization information(i.e. **logical ID**) by means of the transmitting/receiving units to other network elements and to evaluate the authorization information(i.e. **logical ID**) received from other network elements to determine at least partial sections of data transmission routes in the network (**par [0025] discloses assigning logical ID for node that does not belong in the transmission region which is requesting connection with nodes with in the region. Further more, par [0023] discloses logical ID is associated with MAC address. Thus, inherently, authorization information(i.e. logical ID) stored in each nodes and transmitted when required**) Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to enable the system of Billhartz store authentication information and transmitting authentication information when required, and checking entitlement using authentication information, as suggested by Chen. This modification would benefit the system to exchange data securely.

Regarding claim 14, Billhartz and Hasty do not teach checking the authenticity of the found network elements by evaluation of a sent item of authenticity information for

ascertaining the entitlement for data exchange and storage of the entitlement information ascertained there from

However, Chen teaches checking the authenticity of the found network elements by evaluation of a sent item of authenticity information for ascertaining the entitlement for data exchange and storage of the entitlement information ascertained there from(**par [0025] discloses assigning logical ID for node that does not belong in the transmission region which is requesting connection with nodes with in the region. Thus, for a node to be able to exchange data among nodes in a particular transmission/receiving region; its logical ID is check to make sure if indeed the nodes belongs to that particular transmission/receiving region).**

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to enable the system of Billhartz check the authenticity of found network elements, as suggested by Chen. This modification would benefit the system to exchange data securely.

Regarding claim 15, Billhartz and Hasty do not teach transmitting, receiving, allocating and storing in the network unique authorization information in particular address information of network elements and network users

However ,Chen teaches a transmitting, receiving, allocating and storing in the network unique authorization information(**i.e. logical ID**) in particular address information of network elements and network users(**par [0025] discloses assigning logical ID for node that does not belong in the transmission region which is**

requesting connection with nodes with in the region. Further more, par [0023] discloses logical ID is associated with MAC address)

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to enable the system of Billhartz transmitting, receiving, allocating and storing unique authorization information, as suggested by Chen. This modification would benefit the system to exchange data securely.

Regarding claim 17, Billhartz and Hasty do not teach adding network element to the transmitting/receiving region of network already arranged in the network.

However, Chen teaches adding network element to the transmitting/receiving region of network already arranged in the network (**fig.1, and par [0018] disclose adding a new node in a transmitting/receiving region of an already set up network nodes**)

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to enable the system of Billhartz adding network element to the transmitting/receiving region of network already arranged in the network, as suggested by Chen. This modification would benefit the system to exchange data reliably by reducing the distance between nodes.

Regarding claim 20, Billhartz and Hasty do not teach a predefined limited number of items of authorization information for network users which is the same in all network elements

the detection of an association event by a network element which indicates that a network user is within the transmission/reception range of a network element comparison of the communicated authorization information with the predefined known items of authorization information evaluation of the comparison to ascertain whether this is an external network user or a network user who is already known assignment of an item of authorization information when an external network user has been ascertained, communicating the connection path and/or connection state information related to the network user to the network elements of the network, and communicating an item of authorization information to the network user, which is characteristic of the network, in particular address information for data transmission

However ,Chen teaches a predefined limited number of items of authorization information (**i.e. logical ID**) for network users which is the same in all network elements(**FIG.2 and par [0020] disclose transmission regions and each regions has cluster identification and each nodes in the cluster has a logical ID**) the detection of an association event by a network element which indicates that a network user is within the transmission/reception range of a network element(**par [0020] discloses new joining node collects information to associate itself with the neighborhood nodes in its transmission range**)

comparison of the communicated authorization information(**i.e. logical ID**) with the predefined known items of authorization information(**par [0020] discloses new joining node collects information to associate itself with the neighborhood nodes in its**

transmission range that includes logical ID)

evaluation of the comparison to ascertain whether this is an external network user or a network user who is already known(**par [0025] discloses assigning logical ID for node that does not belong in the transmission region which is requesting connection with nodes with in the region**)

assignment of an item of authorization information when an external network user has been ascertained(**par [0025] discloses assigning logical ID for node that does not belong in the transmission region which is requesting connection with nodes with in the region**), communicating the connection path and/or connection state information related to the network user to the network elements of the network(**par [0024] discloses communicating depth and load parameter with the new node so that the new node update its neighborhood list**), and communicating an item of authorization information to the network user, which is characteristic of the network, in particular address information for data transmission(**par [0025] discloses communicating logical ID. Further more, par [0023] discloses logical ID is associated with MAC address**).

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to enable the system of Billhartz comparison of the communicated authorization information, assigning of authorization information for node that join a transmission/receiving region, as suggested by Chen. This modification would benefit the system to exchange data securely.

Claims 4,6-9,11,16,18, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billhartz and Hasty as applied to claims 1 and 12 above, and further in view of Ji to (**US-PGPUB-2005/0152305**).

Regarding claim 4, Billhartz and Hasty do not teach the data memory is adapted for storage of an item of authentication information which is present only a single time for each network element and the control unit is adapted to transmit the authentication information by means of the transmitting/receiving units to other network elements and to evaluate the items of authentication information received from other network elements for checking the entitlement of the other network elements of the network for data exchange in the network

However, Ji teaches a data memory that is adapted for storage of an item of authentication information which is present only a single time for each network element and the control unit is adapted to transmit the authentication information by means of the transmitting/receiving units to other network elements and to evaluate the items of authentication information received from other network elements for checking the entitlement of the other network elements of the network for data exchange in the network (**fig.5A and [0033] disclose communications between SNOWNET nodes as well as between SNOWNET nodes and mobile clients will be secure. Only authorized devices (both SNOWNET nodes and mobile clients) are allowed to access and be served by the SNOWNET**)

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to enable the system **of** Billhartz store authentication

information and transmitting authentication information when required, and checking entitlement using authentication information, as suggested by Ji. This modification would benefit the system of Billhartz to exchange data securely.

Regarding claim 6, Billhartz and Hasty do not teach a first transmitting/receiving unit for the data exchange of network elements with each other and a second transmitting/receiving unit for data exchange between network elements and network users

However, Ji teaches a first transmitting/receiving unit for the data exchange of network elements with each other and a second transmitting/receiving unit for data exchange between network elements and network users (**fig.2 discloses client coverage area and SNOWNET backbone network where it shows communication between clients and access points and communication between access points with each other. Thus, there is two transmitting/receiving units**)

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to enable system of Billhartz's network elements include a first transmitting/receiving unit for the data exchange of network elements with each other and a second transmitting/receiving unit for data exchange between network elements and network users, as suggested by Ji. This modification would benefit the system as a design choice.

Regarding claims 7, and 19 Billhartz and Hasty do not teach coupling means for

coupling the network element for data exchange with a second network in particular a non-wireless infrastructure network like the Internet

However, Ji teaches coupling the network element for data exchange with a second network in particular a non-wireless infrastructure network like the Internet (**fig.2 discloses communicating using Internet)**

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to enable system of Billhartz's network elements to communicate into other network using Internet, as suggested by Ji. This modification would benefit the system to exchange data in a larger coverage area.

Regarding claim 8, Billhartz and Hasty do not teach coupling of the network element to a plurality of different energy sources, in particular solar cells However, Ji teaches coupling of the network element to a solar cells (**[0075] discloses a solar energy device**)

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to enable system of Billhartz coupling of the network element to solar cells, as suggested by Ji. This modification would benefit the system to acquire a long lasting energy source.

Regarding claim 9, Billhartz and Hasty do not teach data exchange that are adapted also to supply the network element with energy by means of the coupling means for data exchange, in particular by means of an Ethernet connection for a non-wireless infrastructure network

However, Ji teaches data exchange using Ethernet connection (**[0079]**

discloses Ethernet cards that is used for exchanging data)

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to enable system of Billhartz data exchange that are adapted also to supply the network element with energy using Ethernet connection, as suggested by Ji. This modification would benefit the system as a design choice.

Regarding claim 11, Billhartz and Hasty do not teach a network element with IEEE 802.1 la standards volatile and non-volatile memories in particular SDRAMs or flash memories a microprocessor or microcomputer unit and/or programmable logic components for regulating and controlling power loss and the energy sources and two antennae respectively for data of network users and network elements

However, Ji teaches a network element with IEEE 802.1 la standards (**fig.4 802.11 NIC**) volatile and non-volatile memories in particular SDRAMs or flash memories (**fig.3 box.404**), a microprocessor or microcomputer unit (**fig.3 box 402**) and/or programmable logic components for regulating and controlling power loss and the energy sources (**fig.3 box 412**) and two antennae respectively for data of network users and network elements (**fig.3. 410's**)

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to enable system of Billhartz include a network element with IEEE 802.1 la standards volatile and non-volatile memories in particular SDRAMs or flash memories a microprocessor or microcomputer unit and/or programmable logic components for regulating and controlling power loss and the energy sources and two

antennae respectively for data of network users and network elements, as suggested by Ji. This modification would benefit the system as a design choice.

Regarding claim 16, Billhartz and Hasty do not teach handing over network users from the transmitting/receiving region of a first network element into the transmitting/receiving region of a second network element in dependence on the connection state information and the connection path information while retaining the unique authorization information associated with the network user

However, Ji teaches handing over network users from the transmitting/receiving region of a first network element into the transmitting/receiving region of a second network element in dependence on the connection state information and the connection path information while retaining the unique authorization information associated with the network user (**[0084] discloses Each SNOWNET node 302 also includes a module supporting secure roaming for clients 528. This is the module 528 that transfers the "trust and credentials" of a client from one SNOWNET node 302 to another when the client 310 moves from one SNOWNET node's local service area to another node's local service area)**

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to enable system of Billhartz handing over network users from first network element to a second network element, as suggested by Ji. This modification would benefit to provide users with a best quality of service.

Regarding claim 18, Billhartz and Hasty do not teach by distinguishing and separating the wireless data exchange in accordance with network users and network elements, in particular by using different frequency ranges, allotting frequency channels, time multiplexing and/or different modulation methods and/or standards of wireless data transmission for data exchange between network users and data exchange only between network elements

However, Ji teaches distinguishing and separating the wireless data exchange in accordance with network users and network elements by allotting frequency channels

(Fig.2 discloses network elements 302 communicate with each other using a different antenna that is not used to communicate with clients)

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to enable system of Billhartz distinguishing and separating the wireless data exchange in accordance with network users and network elements by allotting frequency channels, as suggested by Ji. This modification would benefit the system to reduce traffic congestion and avoid collision.

Regarding claim 22, Billhartz and Hasty do not teach the spatial distance of the network elements is substantially less than the range of the transmitting/receiving units of the network elements.

However, Ji teaches spatial distance of the network elements is substantially less than the range of the transmitting/receiving units of the network elements **(fig.2 discloses network elements that have a larger range of the transmitting/receiving units than their spatial distance)**

Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to enable system of Billhartz reduces the spatial distance of the network elements, as suggested by Ji. This modification would benefit the system to transmit data to a greater distance.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (See PTO-892).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ZEWDU BEYEN whose telephone number is (571)270-7157. The examiner can normally be reached on Monday thru Friday, 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 1-571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Z. B./

Examiner, Art Unit 2419

/Hassan Kizou/

Supervisory Patent Examiner, Art Unit 2419